

WHAT IS CLAIMED IS:

1. An optical mount, comprising:
 - a first plate;
 - a second plate including an adjustment bore having an adjustment bore thread, and a slit that separates a second plate flange from a second plate body and extends proximal said adjustment bore;
 - an adjustment screw having an adjustment screw thread, said adjustment screw extending through said adjustment bore and engaging said first plate for adjusting relative position of said first plate in relation to said second plate, said adjustment screw thread mating with said adjustment bore thread; and
 - a locking screw engaging said second plate flange and said second plate body, said locking screw configured for biasing said second plate flange toward said second plate body to press at least a portion of said adjustment bore thread into said adjustment screw thread for frictionally securing said adjustment screw.
2. The mount as recited in claim 1, wherein said slit extends at least 180° about a longitudinal axis of said adjustment bore.
3. The mount as recited in claim 1, further comprising a spring engaging said first plate and said second plate, said spring configured for biasing said first plate toward said second plate.
4. The mount as recited in claim 3, wherein biasing second plate flange toward said second plate body effects a first locking force F_{L1} on said adjustment screw thread against said adjustment bore thread that is in the same direction as a spring force F_{S1} effected by said spring on said adjustment screw thread against said adjustment bore thread.
5. The mount as recited in claim 1, further comprising a locking bore extending through said second plate body, said locking screw includes a head and a tip, said tip configured for passing through said locking bore, passing across said slit, and

engaging said second plate flange, said head configured for engaging said second plate body.

6. The mount as recited in claim 5, further comprising a flange bore having a locking flange thread, said tip further having a locking screw thread mating with said locking flange thread for adjusting the relative position of said second plate body and said second plate flange.

7. The mount as recited in claim 1, further comprising a flange bore extending through said second plate flange, said locking screw includes a head and a tip, said tip configured for passing through said flange bore, passing across said slit, and engaging said second plate body, said head configured for engaging said second plate flange.

8. The mount as recited in claim 1, further comprising:
an attachment bore through the first plate having an attachment bore axis;
a first plate flange extending inward toward said attachment bore axis;
a channel through said first plate flange and a portion of said first plate;
an attachment having a protrusion with a protrusion axis, said protrusion including an attachment flange extending outward away from said protrusion axis, said protrusion configured for slidably inserting through said channel and into said attachment bore;
said protrusion configured for rotatably coupling said attachment flange and said first plate flange; and
an attachment locking system configured for releaseably coupling said attachment and said first plate.

9. An optical mount comprising:
a first plate including an attachment bore through the first plate having an attachment bore axis, a first plate flange extending inward toward said attachment bore axis, and a channel through said first plate flange and a portion of said first plate;
an attachment having a protrusion with a protrusion axis, said protrusion including an attachment flange extending outward away from said protrusion axis, said protrusion

configured for slidably inserting through said channel and into said attachment bore, said protrusion configured for rotatably coupling said attachment flange and said first plate flange; and

an attachment locking system configured for releaseably coupling said attachment and said first plate.

10. The mount as recited in claim 9, wherein said attachment locking system includes:

said attachment bore, said attachment bore comprising an attachment bore thread, an attachment locking member having a locking member thread mating with said attachment bore thread, said attachment locking member configured for pushing said attachment flange toward said first plate flange for frictionally securing said attachment flange to said first plate flange thereby locking said attachment to said first plate.

11. The mount as recited in claim 9, wherein said attachment locking system includes a pressure member coupled with said attachment and configured for biasing said attachment flange toward said first plate flange for frictionally securing said attachment flange to said first plate flange thereby locking said attachment to said first plate.

12. The mount as recited in claim 11, wherein said first plate includes a first plate top surface, wherein said attachment locking system further includes a contact bore configured for housing said pressure member, and a contact spring biasing said pressure member against said first plate top surface.

13. The mount as recited in claim 12, wherein said attachment locking system further includes a contact bore thread coupled with said contact bore, a contact screw housing having a screw thread mating with said contact bore thread, said contact screw housing coupled with said contact spring.

14. The mount as recited in claim 13, wherein said screw housing is configured for adjusting the pressure said pressure member exerts against said first plate top surface.

15. The mount as recited in claim 11, wherein said pressure member is configured to contact the first plate top surface in proximity to said attachment bore.

16. The mount as recited in claim 9, said mount further comprising a plurality of protrusions and a plurality of channels wherein each said protrusion is configured for slidably insertion through a respective channel.

17. The mount as recited in claim 9, said mount comprising two channels through said first plate flange and a portion of said first plate, wherein said attachment includes two opposing protrusions slidably insertable into said two channels, respectively.

18. The mount as recited in claim 9, wherein said first plate has an inner wall surface defining said attachment bore for receiving the attachment flange.

19. The mount as recited in claim 9, wherein said first plate flange has a first inner radius R_1 , said attachment groove has a second outer radius R_2 , and said attachment flange has a third radius R_3 , wherein the first radius R_1 is greater than the second radius R_2 and the third radius R_3 is greater than the first radius R_1 .

20. The mount as recited in claim 9, said mount further comprising:
a second plate having an adjustment bore having an adjustment bore thread, and a slit that separates a second plate flange from a second plate body and extends into said adjustment bore;

an adjustment screw having an adjustment screw thread, said adjustment screw extending through said adjustment bore and engaging said first plate for adjusting relative position of said first plate in relation to said second plate, said adjustment screw thread mating with said adjustment bore thread; and

a locking screw engaging said second plate flange and said second plate body, said locking screw configured for biasing said second plate flange toward said second plate body to press at least a portion of said adjustment bore thread into said adjustment screw thread for frictionally securing said adjustment screw.

21. A method of securing an attachment to a mount comprising:
providing a first plate including an attachment bore having a longitudinal axis, a first plate flange extending from said wall toward said longitudinal bore axis, and a channel extending through and below said first plate flange into said attachment bore;
providing an attachment including a protrusion and an attachment flange extending from said protrusion away from a longitudinal axis of said attachment;
slidably engaging said attachment to said first plate by inserting said protrusion through said channel and into said attachment bore of said first plate, such that said slidably engaging is accomplished by moving said protrusion through said channel in a direction that is non-parallel to said longitudinal bore axis resulting in coincident alignment of said longitudinal bore axis and said longitudinal attachment axis;
releaseably securing said attachment and said first plate with an attachment locking system.

22. The method as recited in claim 21 further comprising rotating said attachment with respect to said first plate about the coincidentally aligned longitudinal axes thereby moving said protrusion out of alignment with said channel.

23. The method as recited in claim 21, wherein said slidably engaging is accomplished by moving said protrusion through said channel in a direction that is perpendicular to said longitudinal axis of said attachment bore.

24. The method as recited in claim 21, wherein said releaseably securing said attachment further includes tightening a locking screw to bias said attachment flange toward said first plate flange for frictionally securing said flanges.

25. The method as recited in claim 21, wherein said releaseably securing said attachment further includes exerting a pressure on said attachment flange against said first plate flange for frictionally securing said attachment flange to said first plate flange.

26. The method as recited in claim 21 further comprising removing said attachment from said first plate, inserting an optical component into said attachment bore,

and releasably securing said optical component to said first plate with said attachment locking system.

27. The method of using an optical mount comprising:

providing a first plate configured for supporting an optical component, a second plate including a threaded adjustment bore and a slit extending into said adjustment bore, and slit separating a second plate flange from a second plate body, an adjustment screw extending through said threaded adjustment bore and engaging said first plate, said adjustment screw having a threaded portion mating with said threaded adjustment bore;

adjusting the relative position of said first plate in relation to said second plate using said adjustment screw; and

locking said adjustment screw with respect to said second plate using a locking screw, said locking screw engaging said second plate flange and said second plate body and being configured for pulling said second plate flange toward said second plate body to press at least a portion of said threaded bore into said threaded portion of said adjustment screw thereby frictionally securing said adjustment screw.